Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1   1. (Currently Amended) An electronic circuit for cryptographic processing,

2   ~~having a set of combinatorial logical circuits, the set of combinatorial logical~~

3   ~~circuits~~ comprising:

4   a first combinatorial logical circuit, <u>having an input,</u> arranged to

5   perform a first set of logical operations on input data <u>at the input</u> and to

6   produce <u>a corresponding</u> output data, the output data having a <u>given</u>

7   functional relation to the input data, <u>and</u> ~~characterized in that the set of~~

8   ~~combinatorial logical circuits further comprises at least~~

9   a second combinatorial logical circuit, <u>having an input,</u> arranged to

10   perform a second set of logical operations on ~~the same~~ input data <u>at said input</u>

11   and to produce output data, the output data having <u>a</u> ~~an identical~~ functional

12   relation to the input data <u>identical to the given functional relation,</u>

13   wherein the first set of logical operations is different from the second set

14   of logical operations, and

15   <u>a selector for receiving a given input data and</u> ~~wherein the electronic~~

16   ~~circuit is arranged to~~ dynamically select<u>ing from among the first</u> ~~one~~

17   combinatorial logical circuit <u>and the second combinatorial logical circuit</u> ~~of the~~

18 ~~set of combinatorial logical circuits~~ for performing logical operations on <u>the</u>

19 <u>given</u> ~~the~~ input data and producing output data<u>, and</u>

20   <u>wherein the selecting includes inputting the given input data to the</u>

21 <u>input of the selected one of the first and second combinatorial logical</u>

22 <u>circuits and outputting a selected output, the selected output being the</u>

23 <u>output of the selected one of the first and second combinatorial logical</u>

24 <u>circuits</u>.

1   2. (Currently Amended) The electronic circuit according to claim 1<u>, further</u>

2   <u>comprising:</u>

3   a third combinatorial logical circuit, <u>having an input,</u> arranged to

4   perform a third set of logical operations on input data <u>at the input</u> and to

5   produce <u>a corresponding</u> output data, the output data having a <u>given</u>

6   functional relation to the input data, <u>and</u>

7   a fourth combinatorial logical circuit, <u>having an input,</u> arranged to

8   perform a fourth set of logical operations on input data <u>at said input</u> and to

9   produce output data, the output data having <u>a</u> functional relation to the input

10 data <u>identical to said given functional relation</u>,

11   wherein the third set of logical operations is different from the fourth

12 set of logical operations, and

13   <u>a selector for receiving said selected output data and</u> dynamically

14 select<u>ing from among the third</u> combinatorial logical circuit <u>and the fourth</u>

15   combinatorial logical circuit for performing logical operations on the selected

16   output data and producing a second output data, and

17   wherein said selecting includes inputting the selected output data to the

18   input of the selected one of the third and fourth combinatorial logical circuits

19   ~~comprising at least a first set of combinatorial logical circuits and a second~~

20   ~~set of combinatorial logical circuits, and arranged to use output data~~

21   ~~produced by the first set of combinatorial logical circuits as input data of~~

22   ~~the second set of combinatorial logical circuits.~~

1   3. (Currently Amended) The ~~An~~ electronic circuit of ~~according to~~ claim 1,

2   wherein the selector comprises ~~further comprising~~:

3   [[-]]   a selection circuit ~~arranged~~ for generating a signal to select one

4   combinatorial logical circuit of the set of combinatorial logical circuits,

5   [[-]]   a splitter circuit ~~arranged~~ for inputting the given input data to one of

6   the first and second combinatorial logical ~~circuit of the set of combinatorial~~

7   ~~logical~~ circuits, depending on the signal,

8   [[-]]   a merger circuit ~~arranged~~ for outputting data from one of the first

9   and second combinatorial logical ~~circuit of the set of combinatorial logical~~

10   circuits, depending on the signal.

1   4. (Currently Amended) The ~~An~~ electronic circuit of ~~according to~~ claim 3,

2   further comprising a timing circuit ~~arranged~~ to determine the points in

3   time at which the selection circuit generates the signal to select one of the

4   first and second combinatorial logical combinatorial logical ~~circuit of the set~~

5   ~~of combinatorial logical~~ circuits.

1   5. (Currently Amended) An electronic circuit for cryptographic processing,

2   comprising:

3   [[-]]   a combinatorial logical circuit ~~arranged~~ to perform logical operations on

4   input data and to produce an output data,

5   [[-]]   a storage circuit ~~element~~ for storing the output data produced by the

6   combinatorial logical circuit, ~~characterized in that~~

7   wherein the storage ~~electronic~~ circuit ~~further~~ comprises

8   a first ~~set of an~~ encoding means for encoding the output data into a first

9   encoded output data,

10   a storage element for retrievably storing the first encoded output data,

11   a corresponding first decoding means, arranged for ~~encoding output~~

12   ~~data before storing the first output data in the storage element and~~ decoding

13   the first encoded output data into said output data after retrieving the first

14   encoded output data from the storage element~~, respectively~~, and

15   wherein the electronic circuit is arranged to dynamically control the

16   activation of the first ~~set of~~ an encoding means and the [[a]] corresponding

17   first decoding means.

1   6. (Currently Amended) The ~~An~~ electronic circuit of ~~according to~~ claim 5,

2   wherein the storage circuit further comprises ~~comprising:~~

3   a second ~~set of an~~ encoding means <u>for encoding the output data into a</u>

4   <u>second encoded output data for storing in the storage element,</u>

5   a corresponding <u>second</u> decoding means, arranged for ~~encoding output~~

6   ~~data before storing the first output data in the storage element and~~ decoding

7   the second <u>encoded</u> output data <u>into said output data</u> after retrieving the

8   second <u>encoded</u> output data from the storage element~~, respectively,~~

9   wherein the encoding of the first output data is different from the

10   encoding of the second output data, and

11   wherein the electronic circuit is further arranged to dynamically

12   select <u>from among the first</u> ~~one set of an~~ encoding means and <u>its</u> [[a]]

13   corresponding <u>first</u> decoding means and the second ~~set of an~~ encoding

14   means and <u>its</u> [[a]] corresponding <u>second</u> decoding means, for encoding and

15   decoding of the output data.

1   7. (Currently Amended) <u>The</u> ~~An~~ electronic circuit <u>of</u> ~~according to~~ claim 6,

2   further comprising a timing circuit ~~arranged~~ to determine the points in

3   time at which the electronic circuit selects one <u>from among the first and</u>

4   <u>second</u> ~~set of~~ encoding means and corresponding <u>first and second</u> decoding

5   means~~, of a set comprising at least the first set of an encoding means and a~~

6   ~~corresponding decoding means and the second set of encoding means and a~~

7   ~~corresponding decoding means.~~.

1   8. (Currently Amended) The ~~An~~ electronic circuit of ~~according to~~ claim 5,

2   wherein the combinatorial logical circuit comprises:

3   a first combinatorial logical circuit, having an input, arranged to

4   perform a first set of logical operations on input data at the input and to

5   produce a corresponding output data, the output data having a given

6   functional relation to the input data, and ~~characterized in that the set of~~

7   ~~combinatorial logical circuits further comprises at least~~

8   a second combinatorial logical circuit, having an input, arranged to

9   perform a second set of logical operations on ~~the same~~ input data at said input

10   and to produce output data, the output data having a ~~an identical~~ functional

11   relation to the input data identical to the given functional relation,

12   wherein the first set of logical operations is different from the second set

13   of logical operations, and

14   a selector for receiving a given input data and ~~wherein the electronic~~

15   ~~circuit is arranged to~~ dynamically selecting from among the first ~~one~~

16   combinatorial logical circuit and the second combinatorial logical circuit ~~of the~~

17   ~~set of combinatorial logical circuits~~ for performing logical operations on the

18   given ~~the~~ input data and producing output data, and

19   wherein the selecting includes inputting the given input data to the

20   input of the selected one of the first and second combinatorial logical circuits

21   and outputting a selected output, the selected output being the output of the

22   selected one of the first and second combinatorial logical circuits.

9. (Canceled)

1   10. (Currently Amended) A method of processing cryptographic data,

2   comprising:

3   [[-]]   using a set of logical operations for processing input data and producing

4   output data,

5   [[-]]   storing the output data in a storage element, <u>wherein the storing</u>

6   ~~characterized in that the method further~~ comprises:

7   [[-]]   encoding the output data <u>into an encoded output data</u> ~~before~~

8   ~~storing the output data in the storage element~~,

9   <u>storing the encoded output data in the storage element,</u>

10   <u>retrieving the encoded output data from the storage element,</u>

11   [[-]]   decoding the <u>encoded</u> output data <u>retrieved</u> ~~after retrieving~~ from

12   the storage element, <u>and</u>

13   dynamically controlling the encoding <u>of the output data into an</u>

14   <u>encoded output data</u> and <u>the</u> corresponding decoding of the <u>encoded</u>

15   output data <u>retrieved from the storage element.</u>

1   11. (Currently Amended) A cryptographic device comprising an electronic

2   circuit according to claim 1.

1   12. (New) The electronic circuit of claim 1, wherein the selector includes:

2   a first mask circuit for selectively masking and not masking, based on

3   the signal, the given input data for input to the first combinatorial logical

4   circuit, and

5   a second mask circuit for selectively masking and not masking, based

6   on the signal, the given input data for input to the second combinatorial

7   logical circuit.

1   13. (New) The electronic circuit of claim 8, wherein the selector includes:

2   a first mask circuit to selectively mask and not mask, based on the

3   signal, the given input data and to input the selected masked and not masked

4   given input data to the first combinatorial logical circuit, and

5   a second mask circuit to selectively mask and not mask, based on the

6   signal, to input the selected masked and not masked given input data to the

7   second combinatorial logical circuit.

1   14. (New) The electronic circuit of claim 13,

2   wherein the first mask circuit includes an AND mask configured to

3   mask and to not mask the given input data by inputting to the first

4   combinatorial logical circuit a selection between all zeros and the given input

5   data, respectively and

6   wherein the second mask circuit includes an AND mask configured

7   to mask and to not mask the given input data by inputting to the second

8   combinatorial logical circuit a selection between all zeros and the given

9   input data, respectively.

1   15. (New) The electronic circuit of claim 1, wherein the selector includes an

2   OR merger circuit to receive the output of the first combinatorial logical

3   circuit and to receive the output of the second combinatorial logic circuit,

4   and to output, as the selected output, a logical OR of the output of the first

5   combinatorial logical circuit and the output of the second combinatorial

6   logic circuit.

1   16. (New) A method of processing cryptographic data, comprising:

2   generating a mode signal having one of a given plurality of states;

3   receiving a given input data and generating a cryptographic processed

4   data output, said generating including:

5   generating a first input data, wherein the first input data is a

6   selected one of a mask of the given input data and a not mask of the

7   given data, the selection based on the state of the mode signal;

8   generating a second input data, wherein the second input data is

9   the other of the mask of the given input data and the not mask of the

10   given data,

11   performing a first set of logical operations on the first input data

12   to generate a first output data, the first set of logical operations

13   embodying a given input-output function,

14   performing a second set of logical operations on the second input

15   data to generate a second output data, the second set of logical

16   operations being different than the first set of logical operations and the

17   second set of logical operations embodying the same given input-output

18   function, and

19   merging the first output data and the second output data to

20   generate the cryptographic data output;

21   repeating said generating a mode signal to have a different one of the

22 given plurality of states; and

23   repeating said receiving a given input data and generating a

24 cryptographic processed data output.